TRU TeamWorks

October 31, 2008

EXO ribbon cutting held underground

At right: (l to r) NM Representative John Heaton, DOE Carlsbad Field Office Manager Dave Moody, U.S. Senator Pete Domenici, Carlsbad Mayor Bob Forrest, NM Senator Vernon Asbill, and EXO Project Lead Georgio Gratta.

WIPP is taking high-tech science to new depths. On October 22, U.S. Senator Pete Domenici and about 40 other guests gathered in the North Experimental Area at WIPP to celebrate the opening of the Enriched Xenon Observatory (EXO). The 2,150-foot-deep ceremony is the culmination of a nine-year effort to design, develop, download and construct the particle physics experiment at WIPP that is hoped will revolutionize theories of mass in the universe.

"It excites me that some of the best scientific minds in the world will work at WIPP to take neutrino measurements without outside interference," said Domenici, "It is not an overstatement that the work here can make a difference to mankind."

The EXO project benefits from WIPP's underground salt environment, where it is shielded from cosmic radiation that would interfere with sensitive measurements. Senator Domenici has been instrumental in securing federal funding for the project.

EXO is a particle physics collaboration headed by Stanford University that seeks to use a rare nuclear process called double-beta decay to measure the mass of a neutrino. Neutrinos are elusive subatomic particles that are so small they seldom interact, or collide, with other atoms as they pass through the earth. Understanding the neutrino and its mass would help scientists explain the origin of matter and how it is distributed in the universe.

"The EXO-200 detector involves lots of cutting edge technologies and only true collaboration among scientists and industries worldwide make such a project possible," said EXO Project lead Georgio Gratta. By monitoring the rare nuclear decay process of enriched xenon (xenon-136), EXO scientists hope to detect neutrino-less double-beta decay.

Gratta says Russia is the only country with the technology to separate xenon-136 from natural xenon on the scale required. The xenon for EXO was purchased from Russia, where it was processed in Cold War-era facilities that had been used to separate weapons-grade uranium. In addition, components of the detector were produced in Germany, the United States, Italy, France, Switzerland and Canada.

Final testing of EXO's detector is underway and scientists expect to begin measurements early next year. In terms of results, Gratta cautions that patience will be required, as initial results may be as far as five years away.

WIPP Quick Facts
(As of 10-30-08)

7,002
Shipments received since opening

57,406
Cubic meters of waste disposed

107,026
Containers disposed in the underground

U.S. Senator Pete Domenici and EXO Project Lead Georgio Gratta at the EXO ribbon cutting ceremony underground at WIPP.

Could this be the deepest ribbon cutting ceremony ever?

At 2,150 feet below the surface, the Enriched Xenon Observatory ribbon cutting ceremony just may be the deepest ribbon cutting ceremony on record. An online search has not identified any other contenders, so WIPP may have yet another first. WIPP is submitting a claim to the Guinness Book of Records and hopes to have an answer soon.

"As soon as the first data will start coming in, we will be able to validate some of the technical choices made and design even larger detectors that will require up to tons of enriched xenon."

Shipment Number 7,000 arrives at WIPP

The 7,000th shipment of waste arrived safely at WIPP at 2:05 a.m. on October 30. The contact-handled TRU waste shipment originated from Idaho National Laboratory and was transported by Visionary Solutions, LLC.

Transportation services for WIPP are provided by CAST Specialty Transportation Inc. and Visionary Solutions, LLC. To date, WIPP trucks have safely traveled more than eight million loaded miles.

Congratulations to everyone involved in reaching this milestone!

WIPP taking the lead on nuclear safety

A team of experts at WIPP has upgraded its nuclear safety documents–or documented safety analysis (DSA)–making WIPP the first in the DOE complex to implement a new standard for TRU waste analysis.

DSAs are required for DOE nuclear facilities. The documents describe the facility, its operation and analyze postulated accident scenarios posed by natural and/or manmade hazards. The expert team's job is to develop safety procedures and controls to eliminate or limit identified hazards.

Upgrading the WIPP DSA was part of a 14-month project that included revisions to WIPP's technical safety requirements and fire hazards analysis. Together, the documents provide an integrated set of safety basis documents that meet DOE standards and requirements.

Donna Busche (WTS), who led the team's efforts, points to the implementation of "in-process" reviews with DOE to streamline the review and approval process.

"These in-process reviews provided DOE the ability to complete their oversight responsibilities and provide timely feedback," says Busche. "They also eliminated a review and approval period after the documents were submitted and contributed to direct savings by eliminating rework."

DOE Headquarters approved the WIPP DSA on September 16 and implementation is expected this spring. An integrated project team will lead implementation and verification activities.

Painting the Project Pink

In recognition of National Breast Cancer Awareness Month, WIPP employees recently celebrated Paint the Project Pink Day. Above, Adela Cantu (WTS) paints one of Kristi Squires' (CBFO) fingernails pink. In the background are WTS employees Mario Carrasco, Lois George and Marsha Beekman.

A word of thanks

Dear WIPP Family,

During the past several months Mike fought cancer successfully and felt fairly well. Many of you came by to visit with him and that lifted his spirits so much. Complications arising from the treatment took his life on October 9, 2008 and you all responded with tremendous support for my family and me.

I don't have the words to express my full gratitude, but I want to thank each and everyone for taking your time to pray, to visit, to provide food, to send flowers and contributions to several charities, to provide money to help me defray expenses, and to join me in celebrating Mike's incredible life. I hope to meet with each of you in person in the near future to give you a great big "Mike" hug (he could hug better than anyone in the world).

Kay Atwood

Permit change approved by NMED

The New Mexico Environment Department (NMED) approved a change to the WIPP Hazardous Waste Facility Permit that will eliminate continued sampling and analysis at 15 WIPP site locations.

The above exploratory borehole is one of 15 locations on the WIPP Land Withdrawal Area that will no longer require sampling and analysis.

Sampling data, collected by DOE over a 10-year period from the 15 locations, indicated that the areas posed no risk to human health or the environment. Last year, DOE submitted a Class 3 permit modification request to NMED to discontinue sampling of the areas, which included a number of mud pits constructed for exploratory boreholes, an evaporation pond and a material storage area. Following careful review of the data, NMED agreed.

"NMED did a thorough job of reviewing this modification prior to its approval," said Dr. Dave Moody, DOE Carlsbad Field Office manager. "This permit change will in no way diminish our high standards for protecting human health and the area's natural resources."

Permit modifications are categorized based on specific criteria set forth by federal law. This is the third Class 3 permit modification approved by NMED for WIPP. The others were for mining additional panels and authorizing the disposal of remote-handled TRU waste.

Quality Assurance Training Academy begins in Carlsbad

It's back to school time. At least it is for a select group of Quality Assurance (QA) professionals. CBFO recently welcomed students from around the DOE complex to the inaugural class of the QA Training Academy held in Carlsbad, N.M. in late October.

As part of the Environmental Management (EM) Quality Improvement Initiative, DOE recognized the need to provide training to ensure consistency of understanding and implementation of QA at all DOE sites. To do this, CBFO, under the direction of EM, developed the QA Training Academy course. The course, which consists of 21 modules, required more than 1800 hours to develop. At the end of the course, students took a written test which required a passing grade of 80 percent or higher.

"There's a great need to continue training in the field of quality assurance," says Lea Chism, CBFO Quality Assurance Specialist. "As professionals retire or move to other positions, it's important that those filling the ranks have a solid understanding of core principles and requirements."

The course emphasized QA responsibilities for meeting requirements of the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA) 1 standard and DOE O 414.1C, Quality Assurance. The class also supports qualification of QA staff to DOE-STD-1150, Quality Assurance Functional Area Qualification Standard.

The 11-student class roster came from Hanford, Office of River Protection, Savannah River Site, Oak Ridge National Laboratory, Yucca Mountain, Idaho National Laboratory and the Defense Nuclear Facility Safety Board.

Chism, Wayne Ledford (CTAC), Berry Pace (CTAC), Earl Bradford (CTAC), Jim Schuetz (CTAC) and Jon Hoff (WTS) were instructors for the class. The course is to be followed by a practical portion, which involves participating in two audits.

At the conclusion of the course, seven students were able to tour WIPP's surface and underground facilities. The group witnessed waste emplacement and mining, and participated in an emergency exercise where they were required to go to an underground assembly area.

EPA completes QA audit

On October 21 through 23, the U.S. Environmental Protection Agency (EPA) conducted an audit of the Central Characterization Project (CCP) QA Program for the WIPP. The EPA audit team reviewed documents and records and interviewed personnel to determine compliance with American Society of Mechanical Engineers Nuclear Quality Assurance – 1 (ASME/NQA-1), Element 1, *Organization*. Based on this audit, the EPA audit team determined that CCP's QA Program complies with this element of the standard. No findings of non-conformance were identified.

At the closeout meeting, EPA audit team members stated that they were impressed with the level of implementation, communication and knowledge of the individuals interviewed. When issued, the audit report will be made available to the public through the EPA's public dockets.

In the future, the EPA will conduct additional audits to verify the proper execution of other elements of ASME/NQA-1.

Submitted by the QA Management Team

Horseshoes along the Pecos River

WTS recently held a Fall Festival for employees, subcontractors and their immediate families. The event included food, fun, a kid's carnival and door prizes. Above, Daniel Cunningham takes a turn at the horseshoe contest.

October is National Quality Month

Celebrated annually in October, National Quality Month is a public awareness campaign that encourages business, industry, government and academia to focus on the strategic importance of quality and continuous improvement. A commitment to excellence is essential to our nation's long-term economic welfare. Quality in manufacturing and services will contribute to increased productivity, reduced costs and consumer satisfaction.

Quality Assurance (QA) permeates every aspect of our work from the shortest memorandum to the most complex nuclear operation. In principle and in application, QA is at the heart of every successful corporation, project and endeavor. Whether considered simply a good business practice, recognized as a valuable management system or accepted as a vital key to world class performance, QA is integrated into everything we do at WIPP.

The WTS Quality Assurance Program Description (QAPD) provides the foundation for our QA program. The requirements of the QAPD are binding on all personnel through the use of implementing documents.

Each employee is responsible for the quality of his or her work and for promptly reporting all existing, developing or potential conditions adverse to quality to the responsible management for evaluation and action. The QAPD also states that individuals performing work will comply with implementing procedures. When work cannot be accomplished as described in the implementing procedure or accomplishment of such work would result in an undesirable situation, condition adverse to quality or an unacceptable safety risk, the work shall be suspended and the procedures changed in accordance with the approved procedure change process.

Interested in WIPP?

If you would like to be notified when TRU TeamWorks is updated with the latest information about WIPP, send an e-mail message to TRUTeamWorks@wipp.ws.